



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,880	01/19/2001	Chris L. Jones	EXT-071	9748

30623 7590 02/02/2005  
MINTZ, LEVIN, COHN, FERRIS, GLOVSKY  
AND POPEO, P.C.  
ONE FINANCIAL CENTER  
BOSTON, MA 02111

EXAMINER
CHUNDURU, SURYAPRABHA

ART UNIT	PAPER NUMBER
1637	

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/766,880	JONES ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Suryaprabha Chunduru	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 December 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24,33,34,37-63 and 67-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24,33,34,37-63 and 67-71 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/>             Paper No(s)/Mail Date <u>7/23/03; 10/17/03</u></p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)<br/>             Paper No(s)/Mail Date _____</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____</p> |
|--|--|

**DETAILED ACTION**

1. Applicants' response to the previous office action filed on December 1, 2004 has been entered.
2. Claims 1-24, 33-34, 37-63, 67-71 are pending. Claims 33 and 37 are amended.
3. This instant application filed on January 19, 2001 claims priority benefit of 60/176,839 filed on January 19, 2000.

***New Grounds of Rejections***

***Claim objections***

4. (i) Claim 69 is objected because the claim does not end with a period (.).
- (ii) Claims 67-70 are objected because these claims are dependent on a cancelled claim.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

A. Claims 19-24, 58-63 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 19-24, 58-63 are indefinite over the recitation of "capable of" because capability is a latent characteristic and the claims do not set forth the criteria by which to determine capability. That is, it is not clear whether the recited flange have the potential to facilitate the release of gas or do in fact do facilitate the release of gas. Amendment of the claim to read, for example, "which facilitates" would obviate this rejection.

B. Claims 67-70 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. Claims 67-70 are indefinite because the meets and bounds are not clear as they are dependent on a canceled base claim.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

A. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaplan et al.

(USPN. 4,234,400).

Kaplan et al. teach an apparatus of claim 1, for capturing an analyte comprising an electrophoresis cassette (see col. 1, line 49-68) comprising a base (horizontal bed) comprising a pair of electrode channels, a barrier interposed between the two electrode channels (a trough or a tray), wherein the barrier comprises a migration channel, extending between the two electrode channels (the space in the barrier that holds the horizontal slab gel) (see col. 1, line 51-53); a capture gel holder (comb with vertical sides) receivable in the enlarged slot (see col. 2, line 1-15).

With regard to claim 2, Kaplan et al. teach that said barrier comprises a second enlarged slot adjacent to the migration channel for receiving the capture gel holder (see fig. 4 and 6 indicating two enlarged slots for holding two vertical combs in the horizontal gel slab);

With regard to claim 3,5, Kaplan et al. also teach an evaporation cover overlying the electrophoresis cassette and electrode terminals extend through the cover (see col. 2, line 44-47, Fig. 7);

With regard to claim 4, Kaplan et al. teach that the electrophoretic cassette comprises at least on wash well (see col. 2, line 30-40).

With regard to claim 6-7, Kaplan et al. teach that the capture gel holder comprises plurality of teeth (comb), each tooth comprises a non-conductive polymeric mesh that fit in the enlarged slot of the electrophoresis cassette (see col. 3, line 53-63, Fig. 4 and 7, col. 4, line 65-67, col. 5, line 1-10). Thus the disclosure of Kaplan meets the limitations in the instant claims.

B. Claims 17-18, 56-57 are rejected under 35 U.S.C. 102(b) as being anticipated by Landegren (USPN. 5,618,701).

Landegren teaches a capture gel holder of claims 17, 56, comprising a handle, a plurality of teeth (comb-like or prongs) projecting from the handle, at least one of the teeth comprising a bore through the tooth and a gel matrix and a ligand (oligonucleotide) covalently bound to the gel matrix overlaying the bore (see col. 3, line 4-28). With regard to claims 18, 57, Landegren also teaches that the capture holder comprises means adapted to cooperate with respective areas in the electrophoretic cassette (see col. 4, line 64-67). Thus the disclosure of Landegren meets the limitations in the instant claims.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(e) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 8-16, 19-24, 33-34, 37-55, 57-63, 67-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaplan et al. (USPN. 4,234,400).

Kaplan et al. teach an apparatus of claims 8-9, 33-34, 48, -55, for capturing an analyte comprising an electrophoresis cassette (see col. 1, line 49-68) comprising a base (horizontal bed) comprising a pair of electrode channels, a barrier interposed between the two electrode channels (a trough or a tray), wherein the barrier comprises a migration channel, extending between the two electrode channels (the space in the barrier that holds the horizontal slab gel) (see col. 1, line 51-53); a capture gel holder (comb with vertical sides) receivable in the enlarged slot (see col. 2, line 1-15).

With regard to claim 10, Kaplan et al. teach that said barrier comprises a second enlarged slot adjacent to the migration channel for receiving the capture gel holder (see fig. 4 and 6 indicating two enlarged slots for holding two vertical combs in the horizontal gel slab);

With regard to claim 11, 13, Kaplan et al. also teach an evaporation cover overlying the electrophoresis cassette and electrode terminals extend through the cover (see col. 2, line 44-47, Fig. 7);

With regard to claim 12, Kaplan et al. teach that the electrophoretic cassette comprises at least on wash well (see col. 2, line 30-40).

Art Unit: 1637

With regard to claim 14, 16, Kaplan et al. teach that the capture gel holder comprises plurality of teeth (comb), each tooth comprises a non-conductive polymeric mesh that fit in the enlarged slot of the electrophoresis cassette (see col. 3, line 53-63, Fig. 4 and 7, col. 4, line 65-67, col. 5, line 1-10).

With regard to claim 37-47, Kaplan et al. teach a method of capturing or detecting a target molecule contained in a sample comprising providing an electrophoretic cassette comprising migration channel extending between two electrodes, forming sample-well to receive sample, passing a voltage in the electrophoresis cassette to cause sample migration (see col. 8, line 23-60).

However, Kaplan et al. did not teach capture gel holder comprising gel matrix and a ligand covalently bound to the gel matrix.

Landegren teaches a capture gel holder of claims 8-16, 19-24, 33-34, 3755, 58-63, 67-71 comprising gel matrix and a ligand covalently bound to the gel, wherein the ligand is a nucleic acid (see col. 3, line 3-28). Landegren also teaches that the ligand is detectably labeled (see col. 4, line 26-34).

It would have been prima facie obvious to a person of ordinary skill in the art at the time the invention was made, to substitute or modify gel capture holder as taught by Kaplan et al. with a gel capture holder comprising covalently bound ligand as taught by Landegren to achieve expected advantage of developing an improved and sensitive apparatus and method for identifying target molecules. An ordinary skill in the art would have expected a reasonable success that said combination would result in said expected advantage because Landegren teaches that the device provides analysis of target molecules directly avoiding laborious

processing steps for the detection of said target molecules and simplifies the processing steps (see col. 2, line 12-30) An ordinary practitioner would have been motivated to modify the apparatus as taught by Kaplan et al. with the incorporation covalently binding a ligand that specifically binds to a target molecule as taught by Landegren for the purpose of reducing the laborious processing steps in identifying and capturing target molecules using the electrophoretic apparatus.

#### ***Response to Arguments***

8. Applicants' response to the office action is fully considered and found persuasive in part.
9. With regard to the rejection made in the previous office action under 35 USC 103(a), Applicants' arguments and amendments are fully considered and the rejection is withdrawn in view of the amendment.
10. With regard to the allowable subject matter, upon reconsidering the broad scope of the claims, it is noted that the claims are not allowable in view of the new grounds of rejection as discussed above.

#### ***Conclusion***


No claims are allowable.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suryaprabha Chunduru whose telephone number is 571-272-0783. The examiner can normally be reached on 8.30A.M. - 4.30P.M , Mon - Friday,.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 571-272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1637

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Suryapratha Chunduru  
Examiner  
Art Unit 1637.

  
JEFFREY FREDMAN  
PRIMARY EXAMINER  
1/28/15